SABININA, I.G.; KARAUL'SHCHIKOVA, N.N.; POSLAVSKAYA, O.Yu.; GRANITOV, I.I.;
KOGAY, N.A.

Leonid Nikolaevich Babushkin; on his 60th birthday. Izv.Uzb.fil.
Geog.ob-va 6:187-189 '62. (MIRA 15:8)
(Babushkin, Leonid Nikolaevich, 1902-)

KOGAY, N.A.

Regionalization of Uzbekistan territory for purpose of Quaternary geology. Nauch. trudy TashGU no.193:45-50 '62. (MIRA 16:7)

(Uzbekistan--Geology, Stratigraphic)

KORZHENEVSKIY, N.L.; DONTSOVA, Z.N.; KHASANOV, Kh.Kh., dots.; VASIL'KOVSKIY, N.P.; SKVORTSOV, Yu.A.; POSLAVSKAYA, O.Yu.; KOGAY, N.A., dots.; MAMEDOV, E.D.; AKULOV, V.V.; BABUSHKIN, L.N., prof.; SHUL'TS, V.L., prof.; GORBUNOV, B.V.; GRANITOV, I.I.; KOSTIN, V.P.; SMIRNOV, N.V., dots.; TSAPENKO, N.G., dots.; DEGTYAR', V.I.; CHERNOV, P.N.; MUKMINOV, F.G.; SELIYEVSKAYA, A.A.; RYABCHIKOV, A.M.; DALIMOV, N.D., dots.; LOBACH, Kh.S.; TADZHIMOV, T.; ARKAD'YEVA, A.N.; GAL'KOV, Ch.V.; SHTARKLOVA, S.I.; BESSONOV, M., red.; BAKHTIYAROV, A., tekhn. red.

[The Uzbek S.S.R.] Uzbekskaia SSR. Tashkent, Gos.izd-vo UzSSR, 1963. 483 p. (MIRA 16:8)
(Uzbekistan)

BABUSHKIN, L.N.; KOGAY, N.A.

Practice in physicogeographical regionalization of the Uzbek S.S.R. Nauch. trudy TashGU no. 213 Geography no. 24:3-12 '63.
(MIRA 17:5)

KOGAY, N.A.

Geomorphology of the Chirchik Valley. Nauch. trudy TashGU no. 213 Geography no. 24:46-57 '63. (MIRA 17:5)

BABUSHKIN, L.N.; KOGAY, N.A.

Problems of the geographical regionalization of Central Asia and Uzbekistan. Nauch.trudy TashGu no.231 Geog. nauki no.27:5-247 '64. (MIRA 18:8)

KOGAY, Ye. S.

"Data on the Ecology of Anopheles hyrcanus Pall. in Uzbekistan." Cand Biol Sci, Central Asian U, Tashkent, 1954. (RZhBiol, No 4, Feb 55)

SO: Sum. No. 631, 26 Aug 55- Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

KOGAY, YE. S.

KOGAY, Ye.S.

Morphology and variability of the Pallas's malaria mosquito (Anopheles hyrcanus Pall). Trudy Inst. zool. i paraz. AN Uz. SSR 6:3-10 '56. (MIRA 10:6)

(Mosquitoes)

KOGAY, Ye.S.

Materials on the mosquito fauna of Kashka-Darya Province. Uzb.biol. zhur. no.1:37-43 '58. (MIRA 11:12)

1. Institut zoologii i parazitologii.
(Kashka-Darya Province--Mosquitoes)

KOGAY, Ye.S.

Gonotrophic cycle of Anopheles hyrcanus Pall. in the rice region of Uzbekistan. Uzb. biol. zhur. no.3:53-58 '58. (MIRA 12:11)

1. Institut zoologii i parazitologii AN Uzbekskoy SSR.
(Sredne-Chirchikskiy District--Mosquitoes)

KOGAY, Ye.S.

Phlebotomus pavlovskyi Perf. in caves of the Nurata-Tau in Samarkand Province [with summary in English]. Med.paraz. i paraz.bol. no.6:683-688 N-D '58. (MIRA 12:2)

1. Iz Instituta zoologii i parazitologii AN Uzbekskoy SSR (dir. instituta A.A. Abidzhanov).
(FLIES,
-Phlebotomus pavlovskyi, distribution in Russia (Rus))

KOGAY, E. S.

"Some Data on the Biology of Mosquitoes in the Focus of Cutaneous Leishmaniasis."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Zoology and Parasitology of the Ukrainian Academy of Sciences, Kiev.

KOGAY, Ye.S.

Moth flies in districts of Bukhara Province. Dokl.AN UzSSR. no.6:
44-47 '59. (MIRA 12:9)

1. Institut zoologii i parazitologii AN UzSSR. Predstavleno
chlenom-korrespondentom AN UzSSR R.A.Alimdzhanovym.
(Bukhara Province--Moth flies)

KOGAY, Ye.S.

Ecology of Anopheles hyrcanus Pall. larvae [with summary in English].
Med.paraz. i paraz.bolezn. 23 no.1:28-32 Ja-F '59. (MIRA 12:3)

1. Iz Instituta zoologii i parazitologii (dir. A.A. Abidzhanov)
AN Uzbekskoy SSR.
(MOSQUITOES,
Anopheles hycranus, ecol. (Rus))

KOGAY, Ye.S.

Activity and daily rhythm of attacks of Anopheles pulcherrimus Theob. in the rice areas of Uzbekistan. Uzb.biol.zhur. no.1: 46-52 '60. (MIRA 13:6)

1. Institut zoologii i parazitologii AN UzSSR.
(UZBEKISTAN--MOSQUITOES)

KOGAY, Ye.S.

Transmitters of cutaneous leishmaniasis and spreading of this disease in the districts of surkhan-Darya Province. Uzb. biol. zhur. no. 4:58-61 '60. (MIRA 13:10)

1. Institut zoologii i parazitologii AN UzSSR. (SURKHAN-DARYA PROVINCE—DELHI BOIL)

KOGAY, Ye. S.

Bloodsucking mosquitoes and sand flies in regions of the Golodnaya Steppe and measures for their control. Uzb. biol. zhur. no.5:57-64 '60. (MIRA 13:11)

1. Institut zoologii i parazitologii AN UzSSR.
(Golodnaya Steppe--Diptera)
(Insects, Injurious and beneficial)

KOGAY, Ye.S.

Species and distribution of mosquitos in various areas of Surkhan Darya Province. Uzb.biol.zhur.6 no.4:53-57 '62. (MIRA 16:7)

1. Institut zoologii i parazitologii AN UzSSR.
(SURKHAN DARYA PROVINCE—MOSQUITOS)

KOGAY, Ye.S.; SHCHERBAN', Z.P.

Bloodsucking mosquitoes and their distribution in the changing landscape of Tashkent Province. Uzb. biol. zhur. 7 no.6:50-53 '63. (MIRA 17:6)

1. Institut zoologii i parazitologii AN UzSSR.

KOGAY, Ye.S.; LYUBETSKAYA, R.Kh., red.

[Mosquitoes and their control in the Uzbek S.S.R.] Moskity i mery bor'by s nimi v usloviiakh Uzbekskoi SSR. Tashkent, Izd-vo "Nauka" UzSSR, 1964. 31 p. (MIRA 17:11)

KOGAYEV, V. P. (Engr)

KOGAYEV, V. P. -- "Calculation of the Frequency and Form of Natural Oscillations of Blades of Variable Size (Type of Vanes)." Sub 23 Jun 52, Moscow Aviation Technological Inst. (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Vechernaya Moskva, January December 1952

SERENSEN, S.V.; KOGAYEV, V.P.; KOZLOV, L.A.; SHNEYDEROVICH, R.M.; RESHETOV, D.N., doktor tekhnicheskikh nauk, professor, retsenzent; TRAPEZIN, I.I., kandidat tekhnicheskikh nauk, redaktor; YARGANOV, V.G., inzhener, redaktor graficheskikh rabot; POPOVA, S.M., tekhnicheskiy redaktor

[Bearing capacity and strength calculations of machine parts] Nesushchaia sposobnost' i raschety detalei mashin na prochnost'. Pod red. S.V.Serensena. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry, 1954. 208 p. (MLRA 8:4)
(Strength of materials) (Machinery) (Strains and stresses)

SOV/112-57-5-9970

8 (6)

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 5, pp 48-49 (USSR)

AUTHOR: Kogayev, V. P.

TITLE: Theoretical Determination of Frequencies and Waveshapes of Blade Self-Oscillations in Adjustable-Blade Hydraulic Turbines (Teoreticheskoye opredeleniye chastot i form sobstvennykh kolebaniy lopastey povorotno-lopastnykh gidroturbin)

PERIODICAL: V sb.: Kolebaniya v turbomashinakh. M. AS USSR, 1956, pp 111-122

ABSTRACT: It is suggested that an approximate determination of frequencies and waveshapes of hydroturbine-blade self-oscillations be made according to the Rietz method with the assumption that the blade is a variable-thickness plate. The first approximation (for the first frequency) provides 14-18% difference from the experiment. Higher frequencies can also be obtained; however, computers are necessary for calculations. The frequency-determining formula of the form

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SOV /112-57-5-9970

Theoretical Determination of Frequencies and Waveshapes of Blade Self- . . . .

$$fi = \frac{\sqrt{\lambda i}}{2\pi} \cdot \frac{h_{max}}{2(r_2 r_1)} \cdot \sqrt{\frac{E_g}{3\gamma(1-\mu^2)}}$$

is adequate for computing the frequency of oscillations for a blade on the basis of the known frequency for a similar blade of different dimensions. The coefficient λ_i is determined experimentally from model tests. Thus, it is possible not only to determine theoretical frequencies and shapes of turbine blades, but also to find the effect of geometrical size of the blades on these parameters.

I.I.O.

Card 2/2

KOGA [redacted]

Method of statistical study of fatigue test results. Zav. lab. 23 no.5:612-620 '57. (MIRA 10:8)
(Metals--Fatigue) (Mathematical statistics)

AUTHOR: Kogayev, V.P., Candidate of Technical Sciences 32-12-37/71

TITLE: On the Article by V.S.Ivanova and L.K. Gordiyenko (O stat'ye V.S. Ivanovoy i L.K. Gordiyenko).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1491-1492 (USSR)

ABSTRACT: The author criticizes the paper by V.S. Ivanova and L.K. Gordiyenko published in: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1489-1491 (USSR) entitled: "On the Problem of Determining the Fatigue Limit (of Metals)" with respect to the possibility of accelerating determination of the fatigue limit of metals at the cost of a decrease of the number of samples, and describes this method as inapplicable. The author does not believe that results obtained by this method may be considered to be reliable. This is explained mainly by the fact that results in the case mentioned are not uniform, and that therefore determination of the required points must be of a problematic nature, as well as by the fact that determination of the straight line is in this case possible only by sight, so that the problem of determining the fatigue limit would be reduced to mere guesswork. The author prefers the methods developed by Weibull (Stockholm), but also in this case he maintains that in order to obtain reliable data

Card 1/2

On the Article by V.S. Ivanova and L.K. Gordiyenko 32-12-37/71

it is necessary to examine a large number of samples, and that for the evaluation of results statistical methods must be employed. There are 12 Slavic references.

AVAILABLE: Library of Congress

Card 2/2 1. Metals-Fatigue

18(7);28(5) **PHASE I BOOK EXPLOITATION** SOV/1970

Serensen, S.V., M.N. Stepnov, V.P. Kogayev, and Ye. V. Giatsintov

Issledovaniye rasseyaniya kharakteristik vynoslivosti konstruktsionnykh alyuminiyevykh splavov v svyazi s tekhnologiyey ikh proizvodstva (Research on the Scattering of Endurance Characteristics of Structural Aluminum Alloys in Connection With Production Technology) Moscow, Oborongiz, 1958. 122 p. 2,600 copies printed (Series: Moscow. Aviatsionyy tekhnologicheskiy institut. Trudy, vyp. 35)

Sponsoring Agency: Moscow. Aviatsionnyy tekhnologicheskiy institut.

Ed.: T.M. Fedorova, Candidate of Technical Sciences; Resp. Ed.: A.S. Zaymovskaya, Engineer; Ed. of Publishing House: E.I. Shekhtman; Tech. Ed.: L.A. Garnukhina.

PURPOSE: The book is intended for engineering, technical, and scientific personnel, and for graduate students (aspiranty) and students of machine building and metallurgy.

~~Card 1/5~~

Research on the Scattering of Endurance (Cont.) SOV/1970

COVERAGE: The book presents methods of fatigue testing to determine the scattering characteristics of fatigue-life indexes of aluminum alloys. Investigation of the effect of pressing, forging, and stamping these characteristics in aluminum alloys are described. Data on stressed state during tests are included. Effect of specimen on the scattering of fatigue-life indexes is described. Specimens taken from typical high-stressed parts made of V95 and D16 aluminum alloys were tested for fatigue strength. Based on tests of a large number of specimens, probable stability characteristics of fatigue-strength properties and basic data on the effect of degree of deformation of alloys, of the conditions of thermal treatment, etc., were obtained. Considerable attention was given to testing methods and to systems for working out results on the basis of currently-used statistical presentations. The article suggests that these methods should be widely applied in laboratory practice in testing structural alloys for strength. The following Soviet personalities are mentioned: G.I. Ivanov, (fatigue-life of alloy D16 with its treatment); S.M. Voronov, M.N. Stepnov and S.N. Tarantov, (effect of temperature of pressing on the mechanical properties of aluminum alloys); Ya.B. Fridman and M.M. Roytman (microtesting machine for static testing now in use in the VIAM-All-Union Scientific Research Institute of Avia-

Card 2/5

AUTHORS: Serensen, S.V., Kogayev, V.P., Stepnov, M.N., Giatsintov, Ye.V.

TITLE: On the Law Concerning the Distribution of Durability in Fatigue Tests
(O zakone respredeleniya dolgoveschnosti pri ustalostnykh ispytaniyakh)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 3, pp. 324-329(USSR)

ABSTRACT: In connection with the statement made to the effect that the logarithmic law of the distribution of durability is not confirmed by experiments, other distribution functions were suggested by Freudenthal and Gumbel /Ref. 7/ and others. In the present paper the correctness of the logarithmic standard law was checked, and the existence of a "sensitivity threshold according to cycles" was established as a fact. 463 samples were investigated. A graphical drawing for tensions of 30,24 and 21 kg/mm 2 is given; the curve for 21 kg/mm 2 indicates the phenomenon of the sensitivity threshold. In the course of further experiments the latter is found also in the case of greater stresses. From the experiments and a mathematical process the hypothesis expounded already in an earlier work /Ref.10/ is confirmed, so that the conclusion may be drawn that the law mentioned in the title is applicable in the case of the static treatment of results obtained by fatigue tests. There are 3 figures, 1 table, and 10 references, 6 of which are Slavic.

ASSOCIATION: Moscow Institute for Aviation Technology

Kogayev, V.P.

18(4)

PHASE I BOOK EXPLOITATION SOV/2636

Moscow. Aviatsionnyy tekhnologicheskiy institut

Voprosy soprotivleniya materialov; prochnost' alyuminiyevykh splavov (Problems of the Strength of Materials; Strength of Aluminum Alloys) Moscow, Oborongiz, 1959. 117 p. (Series: Its: Trudy, vyp. 37) 3,600 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Ed. (Title page): S.V. Serensen; Ed. (Inside book): B.V. Zaslavskiy; Ed. of Publishing House: L.I. Sheynfayn; Tech. Ed.: L.A. Garnukhina; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This collection of articles is intended for workers of engineering design offices, industrial laboratories and scientific institutes of the machine-building industry and for research fellows and students of advanced courses in schools of higher technical education.

COVERAGE: This collection consists of 8 articles in which mechanical properties of deformed aluminum alloys are described. The load-carrying capacity of parts made of these alloys is considered and some results of the investigation of the distribution of stresses and strains in parts and joints are given.

4. Stepnov, Ye.P. Investigation of Stresses in a Wedge Under a Triangular Load (Applied to Cutters) 32
The author uses the optic method of investigating stresses which makes possible an analysis of the applicability of corresponding theoretical solutions to the determination of a plane stressed state in cutters.

5. Kogayev, V. P. Basis for the Choice of an Equal Strength Beam for Calibrating Wire Tensometers in the Presence of Transversal Vibrations 62
In connection with the elaboration of equipment for the calibration of transmitters, calculation of an equal strength beam with transversal vibrations present is given.

6. Serensen, S.V., M.N. Stepnov, V.P. Kogayev, and Ye. V. Giatsintov. Stability of the Function of Distribution of Durability in Testing the Stability of Aviation Alloys 69
Problems of the stability of aviation structural alloys are considered in the static aspect in order to obtain a stable distribution of durability at various levels of stress.

7. Vorob'yev, A.N. [Deceased], and M.N. Stepnov. Fatigue Limit of Aluminum Alloy AK5 With a Slatelike Structure of Fractures 85
The relation of fatigue to slatelike structure of fractures is analyzed in studying the stability of aviation structural alloys.

8. Stepnov, M.N. Surface Strengthening of Aluminum Alloys AK4-1 and D16T by Hammer Hardening 96
Fatigue resistance of cold-hammered samples with changing parameters of the strengthened layer and the mechanical properties of the layer are described. The dependence of the value of final stresses on the hammering technology is shown and the strengthened layer are determined.

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KOGAYEV, V.P.

25(2);14(10) PHASE I BOOK EXPLOITATION SOV/2739

Akademiya nauk SSSR. Institut mashinostroyeniya

Problemy prochnosti v mashinostroyenii, vyp. 3 (Strength Problems in Mechanical Engineering, Nr. 3) Moscow, Izd-vo AN SSSR, 1959. 94 p. Errata slip inserted. 3,000 copies printed.

Ed.: S.V. Serensen, Academician, Ukrainian SSR Academy of Sciences; Ed. of Publishing House: G.A. Nechayev; Tech. Ed.: N.P. Yegorova.

PURPOSE: This book is intended for design engineers and research workers in the fields of machine building and strength of structures. It may also be useful to students of corresponding specialties in advanced technical schools.

COVERAGE: This is a collection of 5 articles dealing with problems of strength and stability of cylindrical parts. Effect of cut-outs, general conditions for the calculation of endurance, regressive analysis of fatigue, and measurements of limits of fluidity in impact loading are considered. References appear at the end of each article.

Stepnov, M.N., Ye. V. Giatsintov, and V.P. Kogayev. Statistical Processing of the Results of Fatigue Tests on the Basis of Linear Regressive Analysis 71
The authors obtain fatigue diagrams based on the probability of deterioration in given conditions.

Voloshenko-Klimovitskiy, Yu. Ya. Measurement of the Limit of Fluidity in Impact Loading 89
The method of impact loading is described and diagrams showing the dependence of the limit of fluidity on loading and impact speeds are given.

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KOGAYEV, V. P.

PHASE I BOOK EXPLOITATION SOV/3426

Akademiya nauk SSSR. Institut mashinovedeniya

Voprosy prochnosti materialov i konstruktsiy (Problems of Strength of Materials and Structures) Moscow, 1959. 359 p. Errata slip inserted. 3,200 copies printed.

Resp. Ed.: R. N. Reshetov, Professor, Doctor of Technical Sciences; Ed. of Publishing House: G. B. Gorshkov; Tech. Ed.: S. T. Shikin.

PURPOSE: This book is intended for engineers and scientists concerned with the problems of the strength of materials and construction.

COVERAGE: The book contains 28 articles on the strength of materials in general and of machine construction in particular. This collection was prepared under the direction of the Institute of Mechanical Engineering of the AS USSR in honor of Sergey Vladimirovich Serensen, one of the founders and directors of the national school of strength of materials, who recently completed 30 years of scientific activity. The preface gives a short sketch of his life and professional activities. The collection is divided into two parts. The first part contains 13 articles on general problems of strength and the strength of machine construction materials. The second part contains 15 articles on dynamics and calculation of strength and rigidity. There are references at the end of each article.

Vagapov, R. D., and O. I. Shishorina. Effect of Concentrating Stresses Under the Action of Varying Loads 36

Pisarenko, G. S. Problem of the Strength of Brittle Materials Produced by the Methods of Powder Metallurgy 52

Zilova, T. K., and Ya. B. Fridman. Delayed Decomposition of Materials and the Effect of the Reserve of Elastic Energy 63

Nikolayev, G. A., and S. V. Rumyantsev. Effect of Welding Defects on the Mechanical Properties of Welds 82

Shkol'nik, L. M. Dependence of Endurance and Durability on the Characteristics of Static Strength 92

Kramarenko, O. Yu. Fatigue Resistance of Cast Iron During Repeated Overloadings 111

Zakharova, T. P. Fatigue and Continuous Strength of Alloys for Turbine Blades under Conditions of Simultaneous Action of Static and Variable Stresses 123

Fridman, Ya. B., and Ye. M. Morozov. Mechanical Properties of Bimetals 144

Kudryavtsev, I. V., and L. M. Rozenman. Relieving Residual Stresses During Axial Loadings of Surface Riveted Bars 158

Kogayev, V. P., and T. A. Bekah. Construction of a Complete Fatigue Diagram 166

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SOV/122-59-6-4/27

AUTHORS: Serensen, S.V., Member of the Ac.Sc. Ukrainian SSR, Kogayev, V.P., Candidate of Technical Sciences and Beksh, T.A., Engineer

TITLE: Investigation of the Fatigue Resistance of the Metal in a Full-scale Blade of a Variable Pitch Hydraulic Turbine

PERIODICAL: Vestnik mashinostroyeniya, 1959, Nr 6, pp 17-20 (USSR)

ABSTRACT: Test results are given comparing the fatigue endurance strength of standard laboratory specimens and specimens of full-scale thickness cut out from hydraulic turbine blades made by the LMZ (Leningrad Metal Works) of 20Khl3N-L steel. The fatigue tests were carried out at the Institut mashinovedeniya AN SSSR (Mechanical Science Institute of the Ac.Sc., USSR), with the help of special electromagnetic vibrator test rig. A sonic frequency valve generator supplies the vibrator which yields an exciting force of 280 kg at 200 c.p.s. The blade steel with a composition of 0.2% C, 0.56% Si, 0.42% Mn, 0.02% S, 0.02% P, 13.07% Cr and 0.57% Ni has an ultimate tensile strength of about 55 kg/mm^2 and an elongation of about 7-10%, according to

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Investigation of the Fatigue Resistance of the Metal in a Full-scale Blade of a Variable Pitch Hydraulic Turbine

size. Several combinations of types of loading were applied. Some in tension-compressions on a Schenck machine. 16 mm long strain gauges of 95 ohms were used to measure the stress. Most tests were carried out at resonance and stopped with the appearance of fatigue cracks. Test results are shown in s-N curves (Figures 6-9) and a Table 2. Specimens with substantial defects had an endurance limit of 6 kg/mm^2 and those without large defects of about 9 kg/mm^2, both in bending of large specimens (diameter 40-100 mm). Specimens of 7.5 mm diameter cut from full-scale components had a minimum endurance limit of 22.5 kg/mm^2 but showed substantial scatter of values even at the endurance limit. These were tested by bending in rotation. Specimens tested in tension-compression had an endurance limit of 14.3 kg/mm^2 (height of specimen 10 mm). Specimens of 20 mm height, tested in bending, had a limit of 15 kg/mm^2. In all, the endurance limit of full-scale

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Investigation of the Fatigue Resistance of the Metal in a Full-scale Blade of a Variable Pitch Hydraulic Turbine

samples was up to 4 times lower than that of small-diameter laboratory samples in the same material. In spite of this, the fatigue strength reserve factor was shown to be adequate.
There are 9 figures and 2 tables.

Card 3/3

KOGAYEV, V.P., kand. tekhn. nauk.

Dispersion of strength characteristics in relation to stress concentration and absolute dimensions. Vest. mash. 39 no.1:35-42 Ja '59. (MIRA 12:1)

(Strains and stresses)

ROGAYEV, V.P

PHASE I BOOK EXPLOITATION SOV/[illegible]

Ispytaniya detaley mashin na prochnost'; sbornik statey [illegible] prochnosti NTO Mashproma (Testing Machine Parts for [illegible] Articles. Based on Data of the Committee on St[illegible] tific and Technical Society of the Machine-Building [illegible] 1960. 226 p. Errata slip inserted. 5,000 copies printed.

Reviewers: I.V. Kudryavtsev, Doctor of Technical Sciences; [illegible] Ed. of Publishing House: L.I. [illegible]; Tech. Ed.: [illegible] Goriyeva; Managing Ed. for Literature on General Technical and [illegible] Machine Building (Mashgiz): A.P. [illegible], Engineer.

PURPOSE: This collection of articles is intended for engineers and [illegible] at plant laboratories and scientific research institutes.

COVERAGE: The articles contain data on the experience gained by [illegible] search institutes in the field of full-scale and model testing of [illegible] for strength. A number of theoretical [illegible] mental practice are presented. No personalities are mentioned. [illegible] articles are accompanied by references.

Kogayev, V.P., Candidate of Technical Sciences, and [illegible], Engineer. [illegible] Comparison of Endurance Characteristics of the [illegible] Steel [illegible] in Relation to the Frequency of Load Cycles and Stress Concentration 67

Morozov, B.A., Candidate of Technical Sciences, and [illegible], Engineer. The Study of Fatigue Strength of Subassemblies and Parts of [illegible] Equipment by Modeling 84

Yeller, V.A. Engineer. Endurance Testing of Locomotive Subassemblies and Parts 101

Rayevskiy, G.V., Candidate of Technical Sciences, Lenin prize winner. Full-Scale Testing of Welded-Car Constructions 110

Gol'dberg, M.M. Doctor of Technical Sciences, Professor. Testing the Elements of Steel Constructions Under Alternating Stresses 117

Garf, M.E., Candidate of Technical Sciences. Fatigue Testing of Crankshafts and Chassis Constructions 132

Rudnitskiy, N.M. Candidate of Technical Sciences. Full-Scale Testing of Loaded Parts of Automobile Engines 147

Pinegin, S.V., Professor. Problems in the Testing of Rolling-Contact Bearings 156

Shkol'nik, L.M., Candidate of Technical Sciences. Investigating the Strength of Bolted RAIL-Joints by a Full-Scale Fatigue-Test Method 166

Zaroshentsev, G.V., Candidate of Technical Sciences. Estimating the Impact Strength of RAILS 185

Garf, M.E., Candidate of Technical Sciences. Selection of Basic Dynamic Parameters of Equipment for Full-Scale Tests 197

Fikin, L.G., Engineer. Electric Methods of Excitation of Alternating Loads in Full-Scale Fatigue Testing 209

Kononenko, V.O., Professor, Doctor of Technical Sciences. Resonance Phenomena in the Centrifugal Excitation of Alternating Forces 218

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188200 2408, 2808, 1413

AUTHORS: Giatsintov, Ye.V., Stepnov, M.N., Kogayev, V.P.,

TITLE: The fatigue behavior of an aluminum alloy used for helicopter rotor blades

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 51, 1961, 39-66. Issledovaniya ustalosti i dlitel'noy staticheskoy prochnosti alyminiyevykh splavov.

TEXT: The article describes an extensive experimental investigation of the fatigue behavior of avial used for the longerons of helicopter rotor blades. Its chemical composition is (in %): 0.23 Cu, 0.99 Mg, 0.01 Mn, 0.34 Fe, 0.82 Si, 0.05 Zn, 0.25 Cr, 0.05 Ti. Tests for fatigue during bending and alternating tension and contraction, as well as for corrosion fatigue in fresh and sea water were carried out with smooth and notched specimens and specimens with circular incisions and holes. The stresses were applied both symmetrically and asymmetrically. The test data were statistically processed, con-

Card 1/3

31647

The fatigue behavior ... S/536/61/000/051/002/006
D040/D112

4 non-Soviet-bloc. The two references to English-language publications read as follows: Lazan, R.J., and Blatherwick, A.A., Strength Properties of Rolled Aluminum Alloys under Various Combinations of Alternating and Mean Axial Fatigue Stresses, ASTM, 1953, vol. 53; Jensen, H.T., The Elements of a Helicopter Fatigue Substantiation Program, Fatigue in Aircraft Structures, 1956.

X

Card 3/3

31648

10 7400

S/536/61/000/051/003/005
D040/D112

AUTHORS: Giatsintov, Ye.V., Stepnov, M.N., Kogayev, V.P.

TITLE: The effect of stress concentration on the fatigue of V95 aluminum alloy

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no.51, 1961, 67-73. Issledovaniya ustalosti i dlitel'noy staticheskoy prochnosti alyuminiyevykh splavov

TEXT: Examination of the effect of stress concentration on the fatigue of B95(V95) aluminum alloy, confirmed conclusions made previously for 45 steel (Ref.1, Kogayev, V.P., "Vestnik mashinostroyeniya", 1959, no.1), i.e. that the dispersion of the life values in fatigue tests decreases with increasing stresses, that the dispersion also decreases with rising stress concentration if the comparison is made at equal nominal stresses or at equal mean lives, but that there is no apparent dependence between the dispersion of the life values and the level of the stress concentration, if the comparison is made at equal maximum stresses in the concentration zone. The chemical composition of the alloy is (in %): 1.75 Cu, 2.45 Mg, 0.32 Mn, 0.34 Fe, 0.22 Si, 6.49 Zn,

X

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0.13 Cr, 0.07 Zr. Test specimens were prepared from pressed metal of only one heat. The tests consisted in torsional bending at 3000 cycles per minute. Some of the specimens were notched with nearly hyperbolical notches; the hyperbola was straightened by means of G.V.Uzhik's method and the theoretical stress concentration factors (α_σ) were calculated by Neyber's formulas. The obtained data are presented in a table and three graphs, illustrating the dependence of the root-mean-square deviation of the life on the mean life, on the nominal stress, and on the maximum stress. The curves show a sharp increase of the root-mean-square deviation ($\bar{s}$) of the logarithm of the number of cycles lg N upon an increase of the mean life or upon a decrease of the nominal stresses, but the effect of the nonuniformity of the stress distribution in the zone of stress concentration is not reflected by the curves when the comparison is made at equal maximum stresses. This regularity, revealed in the tests of 45 steel and V95 aluminum alloy, may considerably facilitate the plotting of complete fatigue-probability curves and cut the necessary experimental work by using the characteristics obtained on smooth specimens for estimating the probability of failure in stress concentration spots. It is pointed out that the formerly employed characteristic of the sensitivity factor is not entirely correct. The conclusion is made that

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The effect of stress ...

S/536/61/000/051/003/006
D040/D112

further studies of the dependence of $\frac{\sigma_{max}}{\sigma_{-1}}$ (where σ_{max} is the maximum stress in the stress concentration zone and σ_{-1} the endurance limit) on the stress gradients and absolute dimensions in light alloys will lead to more accurate strength calculation methods for machine parts. There are 3 figures, 3 tables and 4 Soviet references.

X

Card 3/3

S/124/62/000/007/024/027
D234/D308

AUTHORS: Serensen, S. V., Kogayev, V. P. and Beksh, T. A.

TITLE: The effect of absolute dimensions and the probability of failure due to fatigue

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 7, 1962, 59-60, abstract 7V459 (V sb. Statist. vopr. prochnosti v mashinostr., M., Mashgiz, 1961, 9-19)

TEXT: Static strength parameters (maximum failure stress and durability) were studied as dependent on cross-section and stress concentration, under conditions of variable bending in one plane on a resonance machine with vibration frequency of 280 c/s, on round smooth and notched specimens made of 45 steel, 7.5, 15 and 25 mm in diameter. Complete fatigue graphs were constructed according to the results of statistical data processing. From the graphs it follows that the fatigue limits in maximum stresses are functions of the diameter of notch bottom and of the gradient of first principal stress; they decrease with increasing dimensions of cross-

Card 1/2

The effect of absolute ... S/124/62/000/007/024/027
D234/D308

section and increase with increasing stress gradient. With decreasing failure probability the degree of influence of scale factor and stress concentration on fatigue strength decreases. At P = 0.1% this influence is practically equal to 0. At P = 95% it shows the decrease of fatigue limit for smooth specimens by 23% when diameters change from 7.5 to 25 mm. When the stress gradient is taken into account, the decrease will amount to 17% only. The authors explain this difference by the fact that the stressed volume decreases with increase of stress gradient, and consequently the failure probability also diminishes, i.e. the failure stresses actually increase. /Abstracter's note: Complete translation./

Card 2/2

KOGAYEV, V.P.; SERENSEN, S.V.

Statistical methods for evaluating the effect of the concentration of stresses and absolute dimensions on fatigue endurance. Zav.lab. 28 no.1:79-87 '62. (MIRA 15:2)
(Strength of materials)

31853
S/032/62/028/001/011/017
B108/B138

16.6200 1327

AUTHORS: Kogayev, V. P., and Serensen, S. V.

TITLE: Statistical method of estimating the effect on fatigue strength of stress concentration and absolute dimensions

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 1, 1962, 79 - 87

TEXT: The dependence of maximum stress in the concentration zone σ_{max} on cross section d, gradient of the first principal stress $\overline{G}$, and probability of rupture P is investigated on the basis of the statistical fatigue theory and Weibull's distribution function (Ref. 1, see below). For a round rod, the relation

[illegible] (12')

is obtained, where I is the absolute integral exponent in the probability of rupture $P(\sigma) = 1 - \exp\left[-\int_F \left(\frac{\sigma - u}{\sigma_0}\right)^m dF\right]$. $u = \sigma$ at $x = a_0$ $(\sigma \geqslant u)$.

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S/032/62/028/001/011/017
B108/B138

Statistical method of...

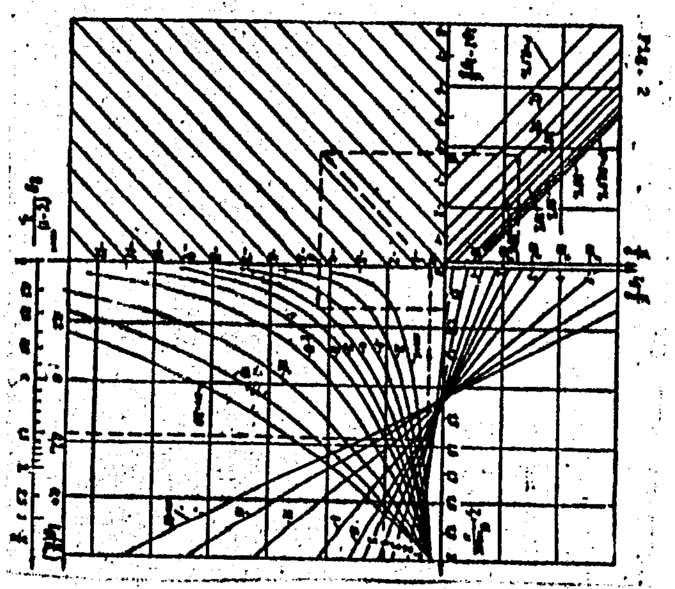

Fig. 2

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GIATSINTOV, Ye.V.; STEPNOV, M.N.; KOGAYEV, V.P.

Fatigue properties of alumimum alloys used for helicopter blades. Trudy MATI no.51:39-66 '61. (MIRA 15:1)

(Alumimum alloys--Fatigue)
(Helicopters--Rotors)

S/766/61/000/000/001/003

AUTHORS: Serensen, S.V., Kogayev, V.P., Beksh, T.A.

TITLE: The effect of the absolute dimensions and the probability of fatigue failure.

SOURCE: Statisticheskiye voprosy prochnosti v mashinostroyenii. Ed. by S.V. Serensen. Moscow, Mashgiz, 1961, 9-19.

TEXT: The paper reports the results of an experimental investigation of the statistical fatigue characteristics of Mark-45 steel as functions of the prevailing stress nonuniformities and the absolute dimensions of the specimen cross-section. Single-plane bending tests were performed on the ИМАШ (IMASh) electrodynamic resonance testing machine described by S.V. Serensen et al. in Vestnik mashinostroyeniya, no.6, 1959. The test frequency was 280 cps. All specimens were made from 50-mm normalized rods of a single smelting batch. Specimens with diam 25, 15, and 7.5 mm were prepared, both without stress concentrators (smooth) and with grooves having a rectified hyperbolic profile. The geometry, the theoretical stress-concentration coefficient, and the relative stress gradient for the various specimens are tabulated. A mean of 20 specimens were tested at each stress level. The statistical-analysis method of V.P. Kogayev (Zavodskaya laboratoriya, no.5,

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linked with the failure probability. With decreasing failure probability it is found that not only does the intensity of the maximal stress and the corresponding number of cycles required to produce failure decrease, but there is also a weakening of the effect of nonuniformities of the stress distribution and of the absolute cross-sectional dimensions on the intensity of σ_{max}. The relationship between the failure probability and the similarity laws in fatigue failures is so substantial that it must be taken into account in the experimental assessment of these factors and their use in stress analysis. The further accumulation of fatigue characteristics (acquired experimentally) in a probabilistic interpretation, with due consideration of the peculiarities of the similarity laws, should enhance the reliability of stress analysis and provide a better substantiation for a selection of permissible stresses and margins of safety, especially in large machines and structures. There are 9 figures, 1 (unnumbered) table, and 15 references (13 Russian-language Soviet and 2 English-language: Freudenthal, A.M., Gumbel, E.I., Failure and survival in fatigue, J.of Appl.Physics, v.25, no.11, November 1954; Weibull, W. A statistical representation of fatigue failure in solids, Royal Institute of Technology, Stockholm, Transactions, no.27, 1949).

ASSOCIATION: None given.

Card 3/3

PHASE I BOOK EXPLOITATION SOV/6290

[illegible], Sergey Vladimirovich, Yevgeniy Valentinovich Giatsintov, Vladimir Petrovich Kogayev, and Mikhail N[illegible] Stepnov

Konstruktsionnaya prochnost' aviatsionnykh splavov (Structural Strength of Aircraft Alloys Used in Aviation Engineering) Moscow, Oborongiz, 1962. 100 p. (Series: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, vyp. [illegible]) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy aviatsionnyy tekhnologicheskiy institut.

Ed.: B. V. Zaslavskiy, Candidate of Technical Sciences; Ed. of Publishing House: B. V. Zaslavskiy; Tech. Ed.: [illegible] Ya. Novik; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: The book is intended for scientific research workers, as well as for design and process engineers working in various branches of the machine-building industry using light alloys.

Card 1/4

Structural Strength of Aircraft (Cont.) SOV/[illegible]

Results of fatigue tests [illegible] rotor blades of helicopters and [illegible] the [illegible] the state of the surface layer [illegible] and certain coatings [illegible], along with experimental data which may be used for determining the carrying capacity of structures. F. K. Bal'zovskiy, [illegible]. Borodin, I. I. Vetkin, and G. T. Ivanov took part in the experimental work. The authors express their thanks to M. I. [illegible] and Z. Ye. Shnurov for their assistance. There are [illegible] references: 19 Soviet, 12 English, [illegible] German, and 1 French.

TABLE OF CONTENTS:

Introduction 3

Ch. I. Factors Affecting the Fatigue Resistance of Aluminum-Alloy Parts (Review of Literature) 5
  1. Effect of the state of the surface, the surface layer, and corrosion on fatigue resistance 7

Card 2/4

CHECHULIN, Boris Borisovich; KOGAYEV, V.P., red.; OZERETSKAYA, A.L., red. izd-va; GINZBURG, R.Ya., tekhn. red.

[Scale factor and the statistical nature of metal strength] Masshtabnyi faktor i statisticheskaia priroda prochnosti metallov. Moskva, Metallurgizdat, 1963. 118 p. (MIRA 16:5)
(Metals--Testing) (Strength of materials)

SERENSEN, S.V., akademik; KOGAYEV, V.P.; SHNEYDEROVICH, R.M.; RESHETOV, D.N., doktor tekhn. nauk, prof., retsenzent; VOSKRESENSKIY, N.N., inzh., red.; TIKHANOV, A.Ya., tekhn. red.

[Carrying capacity and strength calculation of machine parts] Nesushchaia sposobnost' i raschety detalei mashin na prochnost. Izd.2., perer. i dop. Moskva, Mashgiz, 1963. 451 p. (MIRA 16:10)

1. Akademiya nauk Ukr.SSR (for Serensen).
(Machinery--Design and construction)

SERENSEN, S.V. (Moskva); KOGAJEV, V.P. [Kogayev, V.P.] (Moskva)

Statistical aspects of the similarity rules on fatigue failures.
Strojirenstvi 13 no.9:702-709 S '63.

S/2536/64/000/061/0005/0018

ACCESSION NR: AT4044778

AUTHOR: Kogayev, V. P., Giatsintov, Ye. V., Stepnov, M. N.

TITLE: Fatigue strength of AVT alloy and the scale factor

SOURCE: Moscow. Aviatsionny*y tekhnologicheskiy institut. Trudy*, no. 61, 1964. Konstruktsionnaya prochnost' legkikh splavov i staley (Structural strength of light alloys and alloy steels), 5-18

TOPIC TAGS: AVT alloy, aluminum alloy, alloy fatigue, fatigue strength, scale factor, stress concentration, statistical strength theory, fatigue limit distribution

ABSTRACT: Samples of AVT alloy (diam., 40 or 8 mm; tensile strength 36.4 kg/mm^2, yield point 33.5 kg/mm^2, relative elongation 14.2%) were fatigue tested (rotary bending, $2^6 - 10^8$ cycles, 10 - 19 kg/mm^2) to determine the effects of absolute dimensions of sample cross section on fatigue strength. Statistically processed results were plotted as fatigue curves corresponding to various failure probabilities, as endurance distribution functions in relation to sample diameter or stress level, or as fatigue limit distribution functions in relation to sample diameter or number of cycles. Ratios of primary significance to principles governing the effects of the scale factor and of stress concentrations on endurance (considering dispersion) are illustrated, a nomogram is evolved for deter-

Cord 1/2

ACCESSION NR: AT4044778

mining $\xi = \sigma_{max}/u$ in relation to $d/\bar{G}$, P in % and the distribution function parameters m and u/σ_0 (P = failure probability, u = minimal strength threshold below which P = 0) and the authors present numerical calculations of stress concentration sensitivity. It is concluded that these basic ratios describe adequately the effects of scale factor and stress concentration on fatigue strength, considering dispersion of endurance characteristics. Values found for m, u and σ_0 can serve for the calculation of fatigue limits of actual parts in relation to P, and can therefore be used in fatigue calculations based on assumptions of probability. Orig. art. has: 3 tables, 9 graphs, and 18 numbered formulas.

ASSOCIATION: Aviatsionny*y tekhnologicheskiy institut, Moscow (Institute of Aviation Technology)

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 005 OTHER: 003

Card 2/2

ACCESSION NR: AT4044780 S/2536/64/000/061/0026/0037

AUTHOR: Borodin, N. A., Glatsintov, Ye. V., Kogayev, V. P., Stepnov, M. N.

TITLE: Fatigue strength of aluminum alloys during an asymmetric stress cycle

SOURCE: Moscow. Aviatsionny*y tekhnologicheskiy institut. Trudy*, no. 61, 1964. Konstruktsionnaya prochnost' legkikh splavov i staley (Structural strength of light alloys and alloy steels), 26-37

TOPIC TAGS: aluminum alloy, alloy fatigue strength, asymmetric stress cycle, critical stress amplitude, mean stress, endurance characteristic dispersal, mean alloy life, alloy AVT, alloy AVG, alloy AVT1, alloy VD17, alloy AK4-1, alloy 24S-T4, alloy 14S-T6, alloy 75S-T6

ABSTRACT: Experimental data obtained by others were processed statistically to analyze the effects of an asymmetric stress cycle on fatigue strength of aluminum alloys. Results for a group of ten alloys indicate that the latter are quite sensitive to cycle asymmetry, with $\psi = 0.25 - 0.4$ for $N = 10^7$ cycles. A sharper decrease in the peak stress amplitudes $\sigma_{a\,p}$ accompanied low values of mean stress σ_m for a number of the tested alloys and ψ proved variable. The function $\sigma_a = \sigma_{-1} (1 - \frac{\sigma_m}{\sigma_v})$, where σ_v is tensile strength and σ_a

Card 1/2

ACCESSION NR: AT4044785 S/2536/64/000/061/0086/0104

AUTHOR: Stepnov, M. N.; Glatsintov, Ye. V.; Kogayev, V. P.

TITLE: Resistance of alloyed Cr-Ni-V steel to recurrent ~~loads in~~ the elastic-plastic range

SOURCE: Moscow. Aviatsionny*y tekhnologicheskiy institut. Trudy*, no. 61, 1964. Konstruktsionnaya prochnost' legkikh splavov i staley (Structural strength of light alloys and alloy steels), 86-104

TOPIC TAGS: alloy steel, martensitic steel, chromium nickel vanadium steel, recurrent load resistance, recurrent stress test, recurrent stress compression test, recurrent bending test, pulsating recurrent stress cycle, plastic deformation growth, hysteresis loop width, stainless steel

ABSTRACT: Samples of a martensitic Cr-Ni-V steel (yield point 59.3 and 51.9 kg/mm^2, tensile strength 71.0 and 60.0 kg/mm^2 at 20 and 325C, respectively) were subjected to pulsating cycles of recurrent stress (7--10 cpm, asymmetry factor $\rho = 0.1$), recurrent stress-compression (7--10 cpm, $\rho_2 = -08$ to -1.0, deformation $e_{max} = 0.30$--1.5%, $N = 4^2$--2^5, $\sigma_{max} = 33.2$--59.0 kg/mm^2, $\sigma_{min} = -17.8$---54.8 kg/mm^2) and recurrent bending load (cylce duration 15--20 sec., $N = 1000$ cycles, max load 26.7 T or 32 T for one sample, 29.3 T for another). The results indicate that rupture

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ACCESSION NR: AT4044785

under recurrent pulsating stress is due to accumulation of plastic deformation and the resultant increase in actual stress to levels corresponding to single loading rupture. The width and height of the hysteresis loop stabilized after 2--3 stress-compression cycles, endurance was closely related to loop width (10^4 cycles at a width of 0.1%, 8^2 cycles at 0.82%). Rupture at N = 1000 occurs at max stress equal to 0.65--0.75 of nominal tensile strength, with e_{max} = 0.8--1.0%. Life of N = 10^4 cycles resulted at e_{max} = 0.4%. Observed pre-rupture cracks attested to fatigue origin of the rupture. Results of bending tests show accumulation of deformation in the outer layers (in relation to stress recurrence) at a progressively attenuated rate. Rupture did not occur after 1000 cycles at initial e_{max} = 3.61% (ρ = 0.48, final e_{max} = 5.16%) or e_{max} = 10% (ρ = -0.61, final e_{max} = 10.18%). Orig. art. has: 7 tables and 14 figures.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Institute of Aviation Technology)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 001 OTHER: 002

Card 2/2

KOGAYEV, V.P.; GIATSINTOV, Ye.V.; STEPNOV, M.N.

Fatigue resistance of the AVT alloy and the dimensional factor. Trudy MATI no.61:5-18 '64.

Resistance of alloyed chromium-nickel-vanadium steel to repeated loading in the elastoplastic area. Ibid.:86-104

(MIRA 17:10)

BORODIN, N.A.; GIATSINTOV, Ye.V.; KOGAYEV, V.P.; STEPNOV, M.N.

Fatigue resistance of aluminum alloys in case of an asymmetric stress cycle. Trudy MATI no.61:26-37 '64.

(MIRA 17:10)

SERENSEN, S.V.; STEPNOV, M.N.; KOGAYEV, V.P.; GIATSINTOV, Ye.V.

Brittle strength of alloyed steel. Trudy MATI no.61:105-132 '64.
(MIRA 17:10)

L 46207-66 EWT(m)/EWP(w)/T/EWP(t)/ETI [illegible]

ACC NR: AR6000729 SOURCE CODE: UR/0124/65/000/009/V076/V076

AUTHOR: Kogayev, V. P.

10
B

TITLE: Effect of stress concentration and scaling factor on fatigue resistance from the statistical point of view.

16

SOURCE: Ref. zh. Mekhanika, 9V637

REF SOURCE: Sb. Vopr. mekhan. ustalosti. M., Mashinostroyeniye, 1964, 67-100

TOPIC TAGS: fatigue strength, stress concentration, statistic analysis

ABSTRACT: A survey is given in the paper on the statistical theory of fatigue failure from the position of practical applications to strength calculations. On the basis of the Veybull distribution formulas are derived for the failure probability under single axis stress condition as a function of the specimen diameter, stress gradient in the concentration zone, maximum stress, and the parameters which describe the properties of the material. Experimental data are given which are necessary for calculating the indicated parameters. S. D. Volkov [Translation of abstract]

SUB CODE: 11, 20

Card 1/1 blg

KOGAYEV, V.P. (Moskva)

Statistical evaluation of the effect of structural factors on the fatigue resistance of machine parts. Mashinovedenie no.6:69-78 '65. (MIRA 18:11)

L 9490-66 EWT(d)/EWT(m)/EWP(w)/T/EWP(t)/EWP(b) JD/EM
ACC NR: AP6000184 SOURCE CODE: UR/0032/65/031/012/1490/1493

31
B

AUTHOR: Kogayev, V. P.; Kirin, V. V.

ORG: State Scientific Research Institute of the Science of Machines (Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya)

TITLE: Fatigue tests at elevated temperatures under unsteady loading

SOURCE: Zavodskaya laboratoriya, v. 31, no. 12, 1965, 1490-1493

TOPIC TAGS: steel, fatigue strength, fatigue test, mechanical fatigue

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ABSTRACT: An experimental study of the regularity pattern in accumulation of fatigue damage in round (diameter 7.5 mm) steel specimens under alternating loading and elevated temperature is discussed. A testing setup developed for this purpose and the method for calibrating it are described in detail and illustrated by diagrams. It is shown that the linear theory of fatigue-damage accumulation can be used in designing for fatigue strength (or the service life) under nonstationary loading at elevated temperatures, with the exception of cases when there are high, short-time peaks in loading. Testing of specimens was continued up to the instant the first fatigue macrocrack appeared. For an accurate determination of that moment, a method of comparing the load-alternation frequencies with a steady signal from a sound generator by means of the Lissajous figures on an oscillator screen was used; the maximum length of the macrocrack did not exceed 1 mm. The tests (up to 10^7 cycles) were carried out at 800C at several stress levels, and the fatigue strength was determined

Card 1/2 UDC: 620.178.3

2

L 9490-66

ACC NR: AP6000184

O

for each level as well as the fatigue curve. Tests with a two-step variation of stress during the test were carried out at the same temperature, and the sum of accumulated fatigue damage calculated by the linear theory of summation was a = 0.72 to 2.27; that is, the calculated service life of a specimen can be either overestimated (1.4 times) or underestimated (2.3 times), respectively. The tests also showed that a 5% variation in stress causes an 80% variation in the average service life. Orig. art. has: 3 figures and 1 table. [VK]

SUB CODE: 20, 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001/ ATD PRESS: 4162

Card 2/2

L 32693-66 EWT(m)/EWP(w)/T/EWP(t)/ETI JD

ACC NR: AP6016275 (A) SOURCE CODE: UR/0122/66/000/001/0007/0012

AUTHORS: Serensen, S. V. (Academician AN UkrSSR); Kogayev, V. P. (Candidate of technical sciences, Docent)

40
B

ORG: none

TITLE: Durability of machine parts taking into account the probability of failure in the presence of nonstationary variable loading

SOURCE: Vestnik mashinostroyeniya, no. 1, 1966, 7-12

TOPIC TAGS: fatigue test, fatigue strength, durability, steel, bending stress / 45 steel

ABSTRACT: The problem of determining the expected durability of parts when a part of the load-amplitude spectrum exceeds the average value of the fatigue limit is examined. A part is assumed to be operating under a stationary stress amplitude σ, the deviation of which from a certain fixed value σ_1 can be characterized by the standard deviation $s(\log \frac{\sigma_1}{\sigma})$ of the value $\log \frac{\sigma_1}{\sigma}$. On the basis of fatigue tests of 20 parts at a stationary amplitude σ_1, an empirical distribution function of the durability is obtained, which follows a logarithmically normal law of distribution.

Card 1/2 UDC: 621.81:620.169.1

1. KOQHETLIYEV, I. G.

2. USSR (600)

4. Wood Waste

7. Recirculation assemblies ofr pneumatic transportation of wood waste. Der. i lesokhim. prom. 1 no. 2. 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

KOGBETLIYEV, I.G., dots.

Design of cyclone-type exhausters having reversible cones used for settling of shavings. Nauch.trudy MLTI no.7:139-146 '57. (MIRA 11:11)

(Exhaust systems)

KOGEJ, Dusan, dipl. inz. kemije (Ljubljana)

Sintered oxide cathode. Elektr vest 31 no.3/5:91-96 Mr-My '64.

1. Institute of Electronics and Automation, Ljubljana, Teslova 30.

KOGEL', I.S., inzh.; TKACHEVSKIY, V.I., kand.tekhn.nauk; ANDREYEV, V.M., ~~prof.,~~ otv.red.; VERZHBINSKAYA, I.I., inzh., red.; KRASLAVSKIY, G.M., tekhn.red.

[Disk cutters with a mechanical fastening of hard-alloy tips] Diskovye frezy s mekhanicheskim krepleniem plastinok tverdogo splava. Leningrad, 1952. 6 p. (Informatsionno-tekhnicheskii listok, no.18 (359)) (MIRA 14:6)

1. Leningradskiy Dom nauchno-tekhnicheskoy propagandy.
(Metal-cutting tools)

KOGEL', P.G.; KITENKO, A.I.

On the continuity of kinematic links when switching transmissions by central control mechanisms. Stan.i instr. 26 no.9:5-10 S '55.
(Machinery, Kinematics of)

UTHOR: Kogel', P.G.

ITLE: Automatic Devices for the Gear Shift in Machine Tool Trans-
missions by Central Control Mechanisms. (Avtomatika Pereklyu-
cheniya Zubchatykh Peredach Stankov Mekhanizmani Tsentralizovann-
ogo Upravleniya).

ERIODICAL: "Stanki i Instrument" (Machine Tools and Cutting Tools, 21 No.3,
1957, pp.13-15. (U.S.S.R.).

BSTRACT: The problems of automatic gear shift in machine tools are dis-
cussed and a new system of automatic gear shift developed by the
Leningrad Machine Tool Factory, Imeni Sverdlova (Leningradskyi
Stankozavod Imeni Sverdlova) is described which is claimed to
have achieved minimum wear and maximum reliability of operation.
Automatic gear shift systems are classified into gear change at
idling and gear change at standstill. The former is unsuitable
in high speed gear boxes. Analysis shows that even with the use
of synchronising mechanisms a reliable gear shift and a good
service life of the gear faces cannot be combined. It is stated
that the complication and increase in size makes the embodiment
of synchronising gear for the central wheel of a three-crown
moving cluster impracticable. In systems with gear shift at
standstill, if automatic gear shift is desired, an automatic
rotational impulse must be provided. Without "feedback" an
automatic mechanism does not ensure complete reliability of
engagement. Moreover, large impacts are possible. A mechanism

Automatic Devices for the Gear Shift in Machine Tool Transmissions by Central Control Mechanisms. (Cont.)

with "feed-back" is shown diagrammatically. A pre-compressed impulse spring is included in the kinematic chain of the gear shift mechanism. If the gear faces make contact in the non-engagement zone determined by the precise degree of barrelling, additional compression of the spring takes place and an automatic compression switches in the electric feed drive motor, in the inching state of operation. The decompressed spring throws the gears into engagement and switches off the motor. The mechanical requirements to be fulfilled by this mechanism are stated. In detail, the unit accomplishes the engagement with a much reduced impulse torque and axial force. The impulse torque of the motor in its inching state is limited to a value required for the turning of the driving part only of the kinematic chain in a head-on impact of the gear faces. The motor will stall owing to insufficient torque to overcome both the resistance of the driving part of the kinematic chain, together with the engaging gear in the driven part of the kinematic chain. After stalling a time relay automatically reverses the rotational impulse of the motor. The driving part of the kinematic chain is then turned into the correct direction for engagement without turning the engaging wheel of the driven part. After completion of engagement the motor is automatically switched over from

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Automatic Devices for the Gear Shift in Machine Tool Transmissions by Central Control Mechanisms. (Cont.)

the inching state to the normal state of operation. A semi-diagrammatic section and an external view of the device are shown.

There are 4 figures, 1 photograph and 2 references, both of which are Soviet.

ard 3/3

KOGEL', P.G.

Dynamics of automatic gear shifting with reversing impulse devices used on machine tools. Stan.i instr. 28 no.4:4-7 Ap '57.
(MLRA 10:5)

(Gearing) (Automatic control)
(Machine tools)

KOGEL', P. G., Cand Tech Sci -- (diss) "Dynamics of shifting geared transmissions in metal-cutting machine-tools." Leningrad, 1960. 17 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Polytechnic Inst im M. I. Kalinin); 250 copies; price not given; bibliography on page 17 (10 entries); (KL, 26-60, 136)

KOGEL', V., zven'yevoy.

Mixed building crew. Stroitel' no.7:5 Jl '57. (MLRA 10:9)
(Magnitogorsk--Apartment houses)

KOGEN, A.L. (Zaprorzh'ye-41, ul. Shcherbakova, 23/6)

Duodenal fistulas following resection of the stomach. Vest. kh'r. 92 no.6:33-36 Je '64. (MIRA 18:5)

KOGEN, M.M., inzh.; TSILEVICH, B.N., inzh.

Using nomograms included in Collection RS-3-44 for calculating
ship plates made of lightweight alloys. Sudostroenie 24 no.3:8-9
Mr '58. (MIRA 11:4)
(Plates, Iron and steel) (Nomography (Mathematics))
(Shipbuilding)

KOGEN, M.I.

Photolysis of ergosterol following ultraviolet irradiation of aqueous yeast suspensions. Trudy VNIVI 6:97-108 '59. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut. Fiziko-tekhnologicheskaya laboratoriya.

(ERGOSTEROL)

Kogen - V.B.

110-58-6-12/22

AUTHORS: Blokh, G.A., Candidate of Technical Sciences, Kogen, V.B. and Ol'shanskaya, L.A., Engineers

TITLE: On the Vulcanisation of Rubber Mixtures for Cables
(K voprosu o vulkanizatsii kabel'nykh rezinovykh smesey)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, [illegible], Nr 6, pp 54 - 55 (USSR).

ABSTRACT: The work on which this article was based was done by the Works and the Institute in collaboration. Recent researches by Scheele and others (German) into the mechanism of vulcanisation by tetramethyl thiuramdisulphide (thiuram) and by Dogadkin and others on the action of zinc and vulcanisation with dibenzothiazoldisulphide (Al'taks) are of particular interest in connection with insulating rubbers for which carbon black is not used. A study was made of vulcanisation by Al'taks in these rubbers in which chalk and talc are used as filters. The study includes various insulating rubbers; the results of the physical and mechanical tests are given in Table 1. Al'taks cannot fully replace thiuram because the properties of the rubber are than impaired but if these materials are used in the ratio of 1:1, the properties are acceptable.
The effect of zinc oxide in accelerating vulanisation is well

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On the Vulcanisation of Rubber Mixtures for Cables 110-58-6-12/22

known. Recent work of Dogadkin and Benisk have shown that zinc oxide promotes the formation of strong sulphur cross-links in the rubber. A study was made of the physical and mechanical properties of cable-sheath rubber in which the content of zinc oxide ranged from 0 to 3% and the content of manganese oxide was kept constant: the results are given in Tables 2 and 3. A number of cable specimens were made up with rubber of reduced zinc-oxide content and had properties conforming to standard GOST 2068-54. Therefore, the zinc content commonly used could be reduced.
There are 3 tables and 3 references, 2 of which are Soviet and 1 German.

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskiky institut (Dnepropetrovsk Chemićo-technological Institute) and Zavod Azovkabel' (Azovkabel' Works)

SUBMITTED: July 10, 1957

Card 2/2 1. Vulcanizates--Physical properties 2. Vulcanization --Materials

KOGEN, V.S.

New data on muscovite-bearing pegmatites in the southeastern part of the Aldan Shield. Trudy VAGT no.8:106-108 '62. (MIRA 15:11)
(Aldan Plateau--Muscovite) (Aldan Plateau--Pegmatites)

GAMALEYA, Yu.N.; ZABRODIN, V.Ye.; KOGEN, V.S.

Early Sinian volcanic sedimentary deposits of the southeastern Aldan Shield (Uchur River basin). Dokl. AN SSSR 152 no.3: 690-692 S '63. (MIRA 16:12)

1. Aerologicheskaya ekspeditsiya No.2 Vsesoyuznogo aerologicheskogo tresta. Predstavleno akademikom A.L.Yanshinym.

KOGEN-DALIN, V. V. (Engineer)

"Propagation of Impulses Along a Wire Covered With Alloy Steel." Thesis for degree of Cand. Technical Sci. Sub 3 Nov 50, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov.

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

KOGEN-DALIN, V.V., kandidat tekhnicheskikh nauk.

Errors in measuring frequency characteristics by the three voltmeter method. Trudy MEI no.18:146-151 '56. (MIRA 10:1)

1. Kafedra obshchey elektrotekhniki.
(Electric measurements)

KOGEN-DALIN, V.V.

Designing linear chokes for electric models. Nauch.dokl. vys. shkoly; energ. no.1:223-230 '58. (MIRA 11:10)

1.Kafedra obshchey elektrotekhniki Moskovskogo energeticheskogo instituta.
(Induction coils)

8(5)

AUTHOR: Kogen-Dalin, Vladimir Viktorovich, SOV/161-58-2-2/30
Candidate of Technical Sciences, Docent at the Chair of General Electrical Engineering of the Moscow Power Engineering Institute

TITLE: On the Problem of E.M.F.-Induction in the Armature of a D.C. Machine (K voprosu o navedenii e.d.s. v yakore mashin postoyannogo toka)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 2, pp 14 - 23 (USSR)

ABSTRACT: The main purpose of this article is to indicate a method of representing the problem of the emf of D.C.machines in a different way than hitherto used. This way emphasizes the uniformity of phenomena in machines of different types and permits the problem of the emf change in the armature coil to be investigated in detail. These investigations led to the following results: (1) A formula is derived for the emf at no-load on the basis of the topographical diagram of the armature coil. This derivation emphasizes the uniformity of induction phenomena in the armature coil elements of D.C. and

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On the Problem of E.M.F.-Induction in the Armature of a D.C.Machine SOV/161-58-2-2/30

A.C.machines. (2) It is shown that the armature reaction does not affect the magnitude of the emf of a machine with linear magnetic circuit and with a sine-shaped distribution of the magnetic induction in the air-gap. This conclusion applies to any position of the brushes on the collector. (3) In a machine having heavily unsymmetrical reluctances along the longitudinal and the transverse axis and, therefore, also having a wide neutral zone of magnetic induction, the armature reaction leaves the emf unchanged only with a position of the brushes at the geometrical neutral line. By adjusting the brushes, the armature reaction can alter the value of the emf of the machine considerably. There are 8 figures.

ASSOCIATION: Kafedra obshchey elektrotekhniki Moskovskogo energeticheskogo institut (Chair of General Electrical Engineering of the Moscow Power Engineering Institute)

SUBMITTED: January 2, 1958

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SOV/161-58-4-4/28

8(2), 8(5)

AUTHOR: Kogen-Dalin, Vladimir Viktorovich, Candidate of Technical Sciences, Docent

TITLE: Regulation Characteristics of a Motor With Parallel Excitation (O regulirovochnykh kharakteristikakh dvigatelya parallel'nogo vozbuzhdeniya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 4, pp 20-25 (USSR)

ABSTRACT: The regulation characteristics of an idealized machine with parallel regulation and mechanical load of different kind are given. It is supposed that the longitudinal flux of the machine depends only on the excitation current whereby this dependence is linear. The formula (1) of the mechanical characteristics of direct-current motors is given. It is supposed that the load moment does not depend upon velocity and equals M_o, whereupon the formula (1) is transformed into formula (2). The formula (3) for $\Phi^*(M^*)$ and the formula (4) for $\nu(M^*)$ are obtained, and these functions are illustrated in figure 1. $\Phi^* = \frac{\Phi}{\Phi_n}$ whereat Φ_n is the exciting flux corresponding to the normal velocity of the machine at normal load. $\nu = \frac{n}{n_o}$. Then the characteristics of $\nu(\Phi^*)$ are investigated at

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Regulation Characteristics of a Motor With Parallel Excitation

a moment of resistance dependent on the velocity. For the most simple case $M_G = kn$ the moment is proportional to the velocity and the formula (5) is obtained. This is illustrated in form of a diagram in figure 2. Next the characteristic at a load $M_G = kn^2$ is investigated and formula (7) obtained. This is the analytical expression of the number of the regulation characteristics being shown in figure 2. Finally the case $M_G=M_0+kn$ is studied and the formula (9) is derived. The diagram belonging to it is shown in figure 4. The formulas (5) and (9) can be differentiated; formulas (6) and (10) are obtained for the critical values of the excitation and the velocity. There are 4 figures and 1 Soviet reference.

ASSOCIATION: Kafedra obshchey elektrotekhniki Moskovskogo energeticheskogo instituta (Chair of General Electro-Engineering at the Moscow Institute of Power Engineering)

SUBMITTED: September 17, 1958

Card 2/2

KOGEN-DALIN, V.V., kand.tekhn.nauk

Systems of conitionally positive directions and vector diagrams of electric machinery. Trudy MEI no.27:133-147 '58. (MIRA 13:4)

(Electric machinery)